

## ALARM ARRANGEMENT FOR A TIMEPIECE

More precisely, the invention has as its object an alarm arrangement which is intended more particularly for a small electric alarm clock and which may be classified among those in which an alarm is released by the coincidence of a first contact point coupled to a going train included in the timepiece, with a second contact point coupled to an index, the position of which may be set by a manual control element.

### BACKGROUND OF THE INVENTION

In known arrangements of this type, the index is generally formed by a hand which is borne by a cannon wheel arranged on the hour wheel pipe and which may be displaced by turning a knob.

Among these arrangements, there are certain where the two contact points are situated on the facing surfaces of the hour wheel and the wheel which bears the alarm hand, otherwise known as the alarm wheel and where this latter meshes directly with a pinion mounted on the same rotatable stem as the setting knob.

These arrangements are thus very simple and very economical.

The purpose of the invention is to provide an alarm arrangement which may be still more simple.

### SUMMARY OF THE INVENTION

This purpose is attained in view of the fact that in the alarm arrangement in accordance with the invention the second contact point is coupled to a member fixed to a rotatable shaft on which may be pivoted wheel sets of the timepiece going train which bear time indicating hands.

Effectively, in view of this arrangement, it is possible, particularly in the case of a small clock, to adjust the position of the second contact point which corresponds to the time at which the alarm must act by acting directly on the rotatable shaft.

This action may be brought about for instance by means of a button formed or fixed to one of the ends of this shaft and located at the back of the clock such as a time setting knob in the classical alarm clock or in front of the latter such as a time setting knob for a vehicle dashboard clock.

Placing the knob in front of the clock rather than at the back gives rise to an advantage, i.e. it renders the adjustment of the alarm time both easier and faster since there is no need to turn the clock or to feel around in order to find the knob. Unfortunately, such an arrangement is not entirely satisfactory, in particular from the aesthetic viewpoint.

The invention likewise has as its purpose to bring about a solution to this aspect of the problem.

The solution to this problem consists in coupling the rotatable shaft of the alarm arrangement to the glass of the timepiece and fastening this glass to a rotatable bezel in order to permit utilization of these two elements as a manual control unit.

In this case one may provide on the glass any marking whatsoever, for instance a coloured arrow glued or painted thereon which serves as index and is generally easier and more economical than fastening an alarm hand on the rotatable shaft.

As may be well understood, it is likewise possible that the bezel itself bears the index and not the glass.

Other characteristics and advantages of the invention will appear upon reading of the description which follows and from reference to the annexed drawings.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a face view of a small alarm clock provided with an alarm arrangement in accordance with the invention, the manual control element of which is effectively formed by the glass of the clock and a rotatable bezel to which this is fixed;

FIG. 2 is a partial axial cross-section of the clock of FIG. 1;

FIG. 3 is a partial cross-section on an enlarged scale in accordance with line III—III of FIG. 2;

FIG. 4 is a top view of an important part of the clock which serves in particular to maintain the crystal and the bezel axially in place and to guide these elements in rotation;

FIG. 5 is a partial cross-section on an enlarged scale of the same parts according to line V—V of FIG. 4;

FIG. 6 is a face view of another part of the clock which shows how the contacts of the alarm arrangement are obtained.

### DESCRIPTION OF THE PREFERRED EMBODIMENT

The small alarm clock as represented on FIGS. 1 and 2 comprises a part of plastic material 2 which at the same time forms a foot 4, a cylindrical case 6 with an edge 8 and a back cover 10 borne by foot 4, a plate 12 arranged within the case 6 perpendicularly to its axis and a wall 14 for supporting the plate.

Such clock likewise comprises a round glass of transparent plastic material 16, the internal surface of which exhibits at its center an annular collar 18 and of which the edge is fastened for instance by gluing or ultrasonic welding to a bezel 22 likewise of plastic material, the outer diameter of which is substantially equal or slightly greater than that of the case.

As is shown on FIG. 3, the annular collar 18 includes at the interior thereof two spurs 20 parallel to the axis of the glass and diametrically opposed, the use of which will appear hereinafter.

As to bezel 22 it will be observed according to FIG. 2 that it exhibits an internal cylindrical wall 24 having at its base an annular lip 26 directed towards the interior.

Such as it is shown the contour of its profile is approximately in the form of a quarter of a circle but it could also have another form.

What is important is that the assembly, i.e. the glass and the bezel, is mounted at the front of the case 6 in a manner to be capable of rotating about its axis whilst at the same time remaining in contact with the edge 8. Hereinafter will be seen how this assembly is brought about.

Thus, a certain number of risers which emanate from plate 12 and back cover 10 likewise form a portion of part 2. At the extremities of these is fastened a disc 28 likewise of plastic material which is centered on the axis of the case 6 and parallel to plate 12, and the diameter of which is equal to that of the internal cylindrical wall 24 of bezel 22.

FIG. 2 shows one only of these risers designated by reference 30. As in the case of the others, it exhibits at its top a tenon 32 which passes through a hole 34 of the disc, the end of which is flattened in order to form a head 36 and to seize the edge of hole 34 between such head and the bearing surface which is found at the